

the most complete specimen from the English Chalk. Only one other Arcoscalpellid is known so complete as this, and this is an example of the same species from the Chalk of Mendon, France, first described and figured by Hébert (1854, Bull. Soc. géol. France, 2<sup>e</sup> ser. tom. xi. p. 470, figs. 1-3) as *Scalpellum darwini*, and later (1855, Mém. Soc. géol. France, 2<sup>e</sup> ser. tom. v. p. 356, pl. xxviii. fig. 1) as *Scalpellum gallicum*. That specimen has just as many valves as Dr. Blackmore's example, for, while the rostrum is missing, there is a sub-carina. Taken together these two specimens show that the species had a capitulum consisting of fifteen valves, a like number to that deduced from a study of the isolated valves.

The specimen (Pl. X. fig. 6) has the left side uppermost and shows the carina (apex broken), scutum, tergum (apical part broken), upper latus, carinal latus, inframedian latus, and rostral latus. All these valves are in their natural position, except that the inframedian latus is pushed slightly upwards and over the rostral latus. Seven or eight peduncle-plates are present at the base of the capitulum; the uppermost three appear to retain their mutual relation, though pushed on to the inframedian latus. Below the peduncle-plates is seen the displaced rostral latus of the right side, showing its inner surface. The scutum of the right side is slightly displaced and its ad-occludent portion appears from beneath the edge of the left scutum, and inside this part of the right scutum rests the displaced rostrum.

Dr. Blackmore has not only carefully exposed all the plates as seen in the figure, but he has removed all the chalk, except for three pinnacles on which the capitulum rests, so that it is possible to examine the valves of the right side.

Much skill has been shown by Dr. Blackmore in the development of this fine fossil, and it is an exceedingly valuable addition to the National Collection.

---

LXXIX.—*The Holotype of the Cirripede Scalpellum angustum* (Dixon). By THOMAS H. WITHERS, F.G.S.

[Plate X. figs. 7, 8.]

(Published by permission of the Trustees of the British Museum.)

DIXON (1850, Geol. Sussex, p. 353, pl. xxviii. fig. 9) established the species *Xiphidium angustum* on a single small carinal valve from the Chalk of Sussex.

Darwin, in his Monograph (1851, Palæont. Soc. Monogr.

Foss. Lepadidæ, p. 37, pl. i. fig. 2), included the species in the genus *Scalpellum*, but, since he had not the holotype or other specimens before him, had to rely on Dixon's figure, which he reproduced.

The original of Dixon's *Xiphidium angustum* was not in the Dixon Collection, now in the Geological Department of the British Museum, and, in spite of several attempts to trace the specimen, it was not till recently, when on a casual visit to the Brighton Museum, that I noticed it on exhibition there. It was then found that the specimen was mentioned in H. Willett's Catalogue (1871, Cat. Cret. Foss. Brighton Mus. p. 45, No. 35), with a reference to Dixon's pl. xxviii. fig. 9, together with the locality and horizon, "m.c. [= Middle Chalk], Southeram, Lewes," which were otherwise unknown. Willett was a keen collector of Chalk Fossils, and several of his specimens were figured by Dixon, although in the present instance Dixon gave neither the locality nor collection.

There are two large quarries at Southeram—one, Southeram Grey Pit, cut in the Lower Chalk, zones of *A. varians* and *H. subglobosus* (Mem. Geol. Surv., Cretaceous Rocks of Gt. Britain, 1903, vol. ii. pp. 69, 70), and the other, Southeram Limekiln Quarry, cut in the Middle and Upper Chalk, zones of *R. cuvieri* to *M. cor-anguinum* (tom. cit. pp. 401, 402; vol. iii. 1904, pp. 46, 48). Judging from the chalk in which the specimen is embedded, and still more from the fact that Willett gives "m.c." [= Middle Chalk] as the horizon, there can be little doubt that it came from the second quarry, and either from the *R. cuvieri* or *Terebratulina*-zone.

The authorities of the Brighton Museum kindly allowed me to borrow the specimen, and since it agrees in measurements with Dixon's figure, and what is more important has the peculiarity that the intraparietes are broken off as indicated in the figure, there is no doubt that it is the type.

Darwin (1851, p. 38)—relying on the accuracy of J. de C. Sowerby's drawing (Dixon's pl. xxviii. fig. 9), which depicts the lower end of the intraparietes as abruptly and obliquely truncated, and also on the sharply pointed basal margin—believed the species to be new. Examination of the type, however, shows that the abrupt truncation of the intraparietes is due to the valve being broken across near the base of the intraparietes (see Pl. X. fig. 8). The valve is comparatively narrow, the tectum only moderately arched transversely, and on each side of the tectum there is a comparatively narrow but protuberant ridge; the parietes are

rather narrow and separated from the intraparietes by a ridge; the intraparietes are comparatively wide and form a thin wall on each side of the valve.

None of the characters shown by this valve of *S. angustum* seems to justify its separation from the species *S. angustatum* (Geinitz, 1843, Verstein. von Kieslingwalda, p. 7, pl. iv. fig. 10), which was based on a single carina from the Pläner-kalk of Strehlen, Saxony, but better figures of the carina, together with scuta and terga, were later given by Geinitz (1875, Palaeontogr. Bd. xx. Abth. ii. p. 202, pl. xxxvii. figs. 14–20). Further, there seems little doubt that *S. quadricarinatum* (Reuss, 1846, Verst. der Böhmisches Kreidef. p. 105, pl. xlii. fig. 18; 1864, Sitz. d. Akad. d. Wiss. Wien, Bd. xlix. Abth. i. p. 238, pl. ii. fig. 14) is also the same species. *S. quadricarinatum*, which occurs in the Pläner-kalk of Bohemia, was likewise established on a carina. Darwin evidently accepted this as a separate species, mainly because of the truncated base shown in the figure (Reuss, 1846, pl. xlii. fig. 18); but surely this figure represents merely the apical part of a carina, and the truncated base is where the lower part has been broken away, for the growth-lines indicate that the parietes and intraparietes are incomplete at the base.

It is the later figure of *S. quadricarinatum* given by Reuss (1864, pl. ii. fig. 14) that best brings out the agreement both with *S. angustatum* (Geinitz) and *S. angustum* (Dixon), and, since it is evident that one species only is represented, this must be known as *S. angustatum* (Geinitz). Valves referable to *S. angustatum* are known to me from the Cenomanian and Turonian of England, and there is every reason to suppose that *S. angustatum* is the ancestor of the Senonian *S. fossula*, Darwin.

*Scalpellum angustum*, G. O. Sars (1879, Archiv. Math. og Naturv. Christiania, Bd. iv. p. 466; olim *S. stræmii*, C. Heller, 1878, Denkschr. k. Akad. Wiss. Wien, Bd. xxxv. p. 39, pl. iv. figs. 13, 14, non *S. stræmii*, M. Sars, 1859, Forhandl. Vidensk-Selsk. Christiania (1858), p. 158), is a recent species that appears to be generally accepted as distinct, and, since its name is preoccupied by *S. angustum* (Dixon, 1850), it may be re-named *S. sarsi*, nom. nov.

I am indebted to Mr. Henry D. Roberts, Director of the Brighton Museum, for the loan of the specimen, and also to Mr. C. T. A. Gaster for information with regard to the chalk pits in the neighbourhood of Southeram, Lewes.

## EXPLANATION OF PLATE X.

*Lepidocoleus grayæ*, sp. n.

Upper Ordovician, Lower Ardnallan series, Drumnuck group,  
Mudstones: Thraive Glen, Girvan, Ayrshire.

- Fig. 1.* Side-view of a shell with the upper and lower extremities broken away.  $\times 3$  diam. Holotype, B.M., In. 21648.  
*Fig. 2.* View from "fixed" margin of same.  $\times 3$  diam.  
*Fig. 3.* Enlarged view of the two lowermost plates of same, showing details of ornament.  $\times 10$  diam.  
*Fig. 4.* Diagrammatic transverse section.  $\times 6$  diam.  
*Fig. 5.* Side-view of another shell, showing rounded basal extremity.  $\times 3$  diam. B.M., In. 21649.

*Scalpellum (Arcoscalpellum) fossula*, Darwin.

Upper Senonian, *Actinocamax quadratus*-zone: East Harnham,  
near Salisbury, Wilts.

- Fig. 6.* Left side of an almost complete capitulum. The rostrum is seen on the inside of the displaced right scutum, and the inner surface of the displaced right rostral latus is seen at the base of the capitulum.  $\times 3$  diam. B.M., In. 21559.

*Scalpellum (Arcoscalpellum) angustatum* (Geinitz).

Turonian (*Rhynchonella cuvieri* or *Terebratulina*-zone): Southeram,  
Lewes, Sussex.

- Fig. 7.* Carina. Outer view. Holotype of *S. angustum* (Dixon), Geol. Sussex, pl. xxviii. fig. 9.  $\times 4$  diam. Brighton Museum.  
*Fig. 8.* Side-view of same.

LXXX.—*Descriptions and Records of Bees.*—XCIV.

By T. D. A. COCKERELL, University of Colorado.

*Dianthidium sinapinum flavatum*, subsp. n.

*Anthidium flavatum*, Nurse MS.

♀ (type).—Like *D. sinapinum*, Ckll., from Karachi, but ocelli on a black patch, and a black stripe from each lateral ocellus to antenna; mesothorax with a median black stripe, ending posteriorly in a large black patch which includes extreme base of scutellum; halfway between middle and sides of mesothorax are broad black bands, not extending quite as far anteriorly as level of anterior margins of tegulae; margins of scutellum, on each side of the middle, less convex. Abdomen with a median black stripe, and extreme bases of segments black, giving a dusky effect to the translucent hind margins covering them.

♂.—A large quadrate black patch occupying front, limited above by a yellow occipital band, and at sides by narrow